

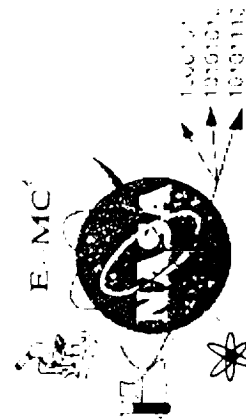
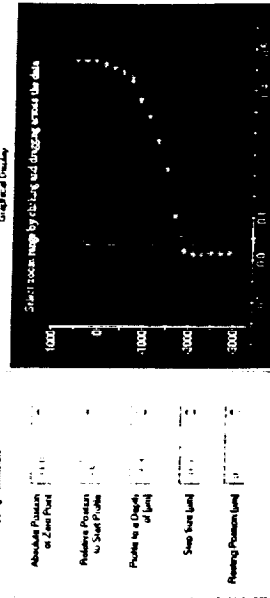


ScienceDesk Group

**Computational Sciences Division
NASA Ames Research Center**

Contact: Richard Keller, Ph.D., rkeller@arc.nasa.gov, 650.604.3388

ScienceOrganizer is a specialized knowledge management tool designed to enhance the information storage, organization, and access capabilities of distributed NASA science teams. Users access ScienceOrganizer through an intuitive Web-based interface that enables them to upload, download, and organize project information -- including data, documents, images, and scientific records associated with laboratory and field experiments. Information in ScienceOrganizer is "threaded", or interlinked, to enable users to locate, track, and organize interrelated pieces of scientific data.

[illegible][illegible]

ScienceOrganizer was developed in conjunction with scientists in the Early Microbial Ecosystems Group and the Electron Microscopy Lab at NASA Ames, and is undergoing test usage by these groups and the Ecogenomics Focus Group within the NASA Astrobiology Institute (NAI).

ScienceOrganizer Interface Features

search for records (points to Search button)

create new records (points to New Item button)

create new links (points to Links button)

icon identifies record type (points to record icons)

modify records (points to Modify button)

Links to Related Records

- convenient navigation
- predefined links
- information traceback

click to navigate (points to record list)

Web-based, platform independent access

Project Information Record

- images
- datasets
- cultures
- samples
- field sites
- measurements
- instruments
- lab notes
- publications
- spreadsheets

data fields

View Links for Current Item:

- HBC-2
- HBC-2 16S rRNA sequence
- HBC-2 Growth Medium Recipe
- ASN Medium Recipe
- ASN Maintenance Medium Recipe
- ASN Medium Recipe
- Isolated By
- Labeled By
- HBC-2 Image
- HBC-2 Image (raw)

Info for Current Item:

Cultures: HBC-2

Notes: isolated from caranel layer, stromatolite beach, Hightborne Cay, 6/97

Description

Genus: *Bergey's*
Genus Status: unknown
Species: Tentative

Strain Number: unknown
Alternative Names: Phormidium Schuolthox

Cyanobacteria Length (μ): 1
Cyanobacteria Width (μ): 1

Physiology: Unknown
N2 Fix: Unknown
Motility: Unknown
Salt Tolerance: Marine
Heterotrophic: Unknown
Anaerobic Photosynthesis: Unknown

Characteristics: PE
Pigments:

The right side of the ScienceOrganizer interface displays a project information record describing a microbial culture, including various data fields describing collection, cultivation, and isolation conditions for the culture. The left hand side of the interface displays links from the culture to various related records, including the sample that the culture was grown from, a micrograph of the culture, genetic sequence data, and recipes for growth and maintenance media. The user simply clicks on a link to navigate to a related record.

Creating and Linking a New Record in ScienceOrganizer

1. Click to create a new measurement record linked to the sample record called 'Streamer mat 1'

2. Enter name of new measurement record

3. Enter information about the measurement using pull-down lists, selection boxes and text entry fields

4. Browse your hard drive or network to select data file to upload into system

5. Confirm new record creation

The interface shows a 'New Item' button at the top left. Below it, a list of links for current items includes 'Mat Sample Streamer mat 1'. The main form is titled 'Enter Info for New Item:' and contains several sections: 'Data' (Reduced By: Mary Hogan, Measured By: Brad Bebout), 'Measured For' (No Value Given, Temperate Benthic Mayweed mals, Microcosm Survey), 'Measurement Device' (Hydrogen Analyzer), 'Sample' (Streamer mat), 'Date' (Month: 3, Day: 24, Year: 2000), 'Measurement Type' (concentration), and 'Notes' (We used a standard curve created from a dilution series of pure nitrogen. It may make more sense to use zero (peak area = zero) and air samples). A 'Browse...' button is next to the file path 'C:\ScienceDesk\SAOit'. At the bottom, a 'Create' button is circled.

Users create new Project Information Records by filling out the form on the right hand side of the interface. Data and image files are uploaded into the system from the user's hard disk and stored on the ScienceOrganizer server, where they can be accessed by other project members. The new record will be linked to the existing 'Streamer mat 1' record shown in the left hand side of the interface.

Science Organizer: EMERG - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Science Organizer: An Information-Sharing Tool For Scientific Project Teams

New Item Search Home History Logout Questions/Feedback

View Links for Current Item:

- Project: EMERG
- Home
- History
- Logout
- Questions/Feedback

Search for items:

Enter criteria for items to display:
Display every item container & either whose name contains
and whose type is (choose one or more):

<input type="checkbox"/> All Items <input type="checkbox"/> Culture <input type="checkbox"/> Document <input type="checkbox"/> Experiment <input type="checkbox"/> Institution <input type="checkbox"/> Laboratory <input type="checkbox"/> URL <input type="checkbox"/> Note <input type="checkbox"/> Person <input type="checkbox"/> Project <input type="checkbox"/> Site <input type="checkbox"/> Study Area <input type="checkbox"/> Trip <input type="checkbox"/> Generic	<input type="checkbox"/> All Equipment <input type="checkbox"/> Camera <input type="checkbox"/> Flow Box <input type="checkbox"/> Fluorometer <input type="checkbox"/> Gas Chromatograph <input type="checkbox"/> H2S Microsensor <input type="checkbox"/> H Microsensor <input type="checkbox"/> Ion Chromatograph <input type="checkbox"/> Light Microsensor <input type="checkbox"/> Mass Spectrometer <input type="checkbox"/> O2 Microsensor <input type="checkbox"/> pH Meter <input type="checkbox"/> pH Microsensor <input type="checkbox"/> Refractometer <input type="checkbox"/> SEM <input type="checkbox"/> Spectrophotometer <input type="checkbox"/> Thermometer <input type="checkbox"/> Tray <input type="checkbox"/> Equipment (Other)	<input type="checkbox"/> All Images <input type="checkbox"/> Micrograph <input type="checkbox"/> Photo <input type="checkbox"/> SEM Image <input type="checkbox"/> Image (Other) <input type="checkbox"/> All Samples <input type="checkbox"/> Gas Sample <input type="checkbox"/> Mat Sample <input type="checkbox"/> Sediment Sample <input type="checkbox"/> Water Sample <input type="checkbox"/> Sample (Other) <input type="checkbox"/> All Measurements <input type="checkbox"/> Acetylene Reduction <input type="checkbox"/> Ammonium <input type="checkbox"/> Biomarker Analysis <input type="checkbox"/> Carbon Isotope <input type="checkbox"/> Carbon Monoxide <input type="checkbox"/> Dissolved Inorganic Carbon <input type="checkbox"/> Dissolved Organic Carbon <input type="checkbox"/> Fluorescence <input type="checkbox"/> Hydrogen <input type="checkbox"/> Hydrogen Sulfide <input type="checkbox"/> Light <input type="checkbox"/> Major Ions <input type="checkbox"/> Methane <input type="checkbox"/> Nitrate <input type="checkbox"/> Orthophosphate <input type="checkbox"/> Oxygen <input type="checkbox"/> pH <input type="checkbox"/> Salinity <input type="checkbox"/> Temperature <input type="checkbox"/> Volatile Sulfur <input type="checkbox"/> Measurement (Other)
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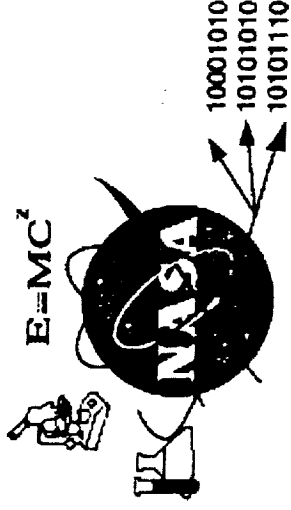
Go to culture search

Sort by name type date

Reset

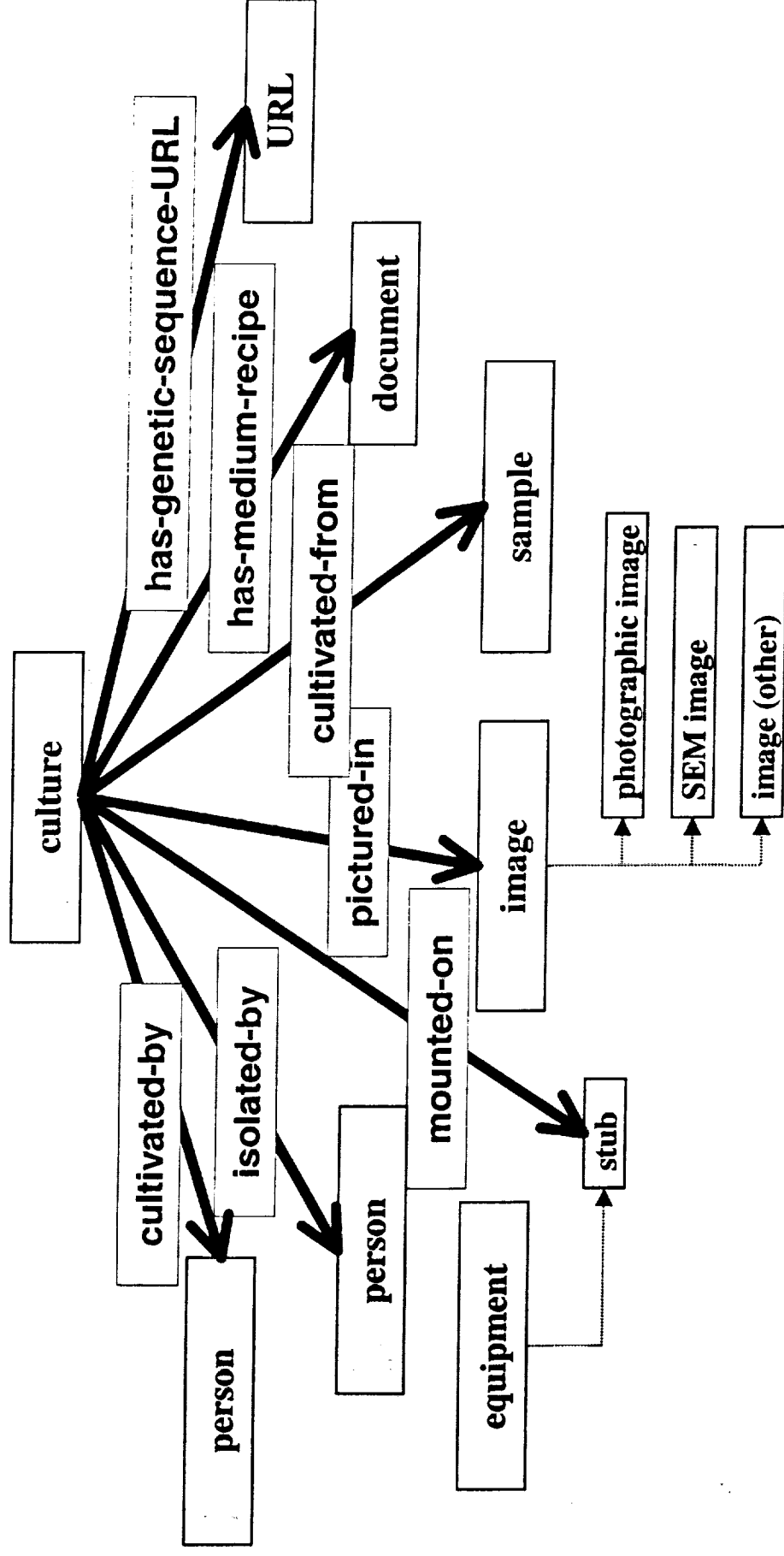
Check off the type of records you are searching for

What is ScienceOrganizer?



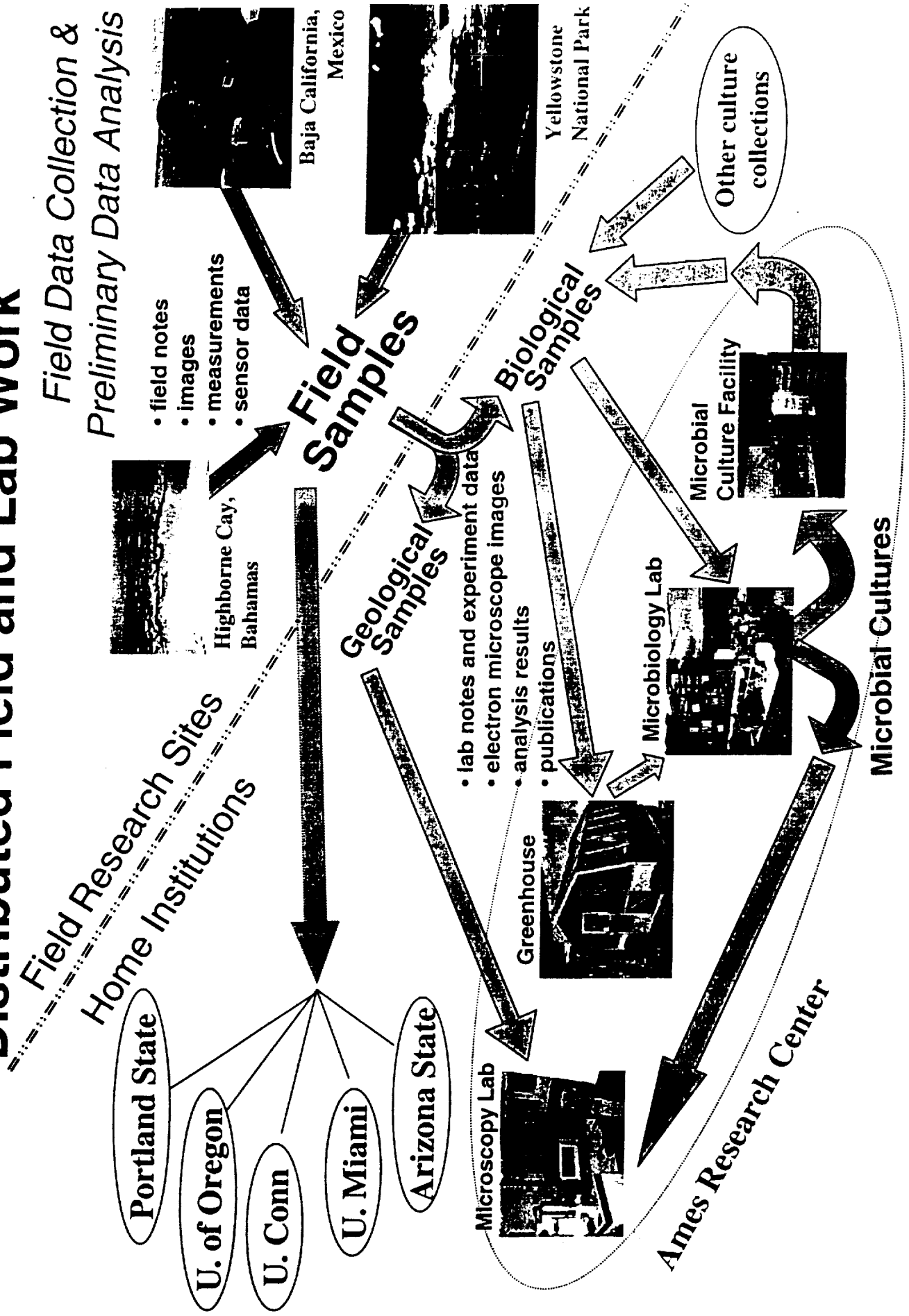
- An information repository / digital library for distributed scientific project teams
- A hybrid tool combining the functionality of:
 - a database
 - a document-sharing system
 - a web-like hypermedia information space
- Enables storage and retrieval of heterogeneous project information: *images, datasets, documents, and various types of scientific records (describing samples, field sites, measurements, instruments, microbial cultures, etc.)*
- Supports cross-linkage among stored items to enable rapid access to interrelated information

Sanctioned Links between “Culture” Records and Other Types of Project Information Records



The links between records in ScienceOrganizer are predefined based on an analysis of the important relationships among the various information products gathered by the scientific project team during the course of their work. This diagram depicts the relationships defined between microbial cultures and other types of information records in ScienceOrganizer.

Early Microbial Ecosystems Group: Distributed Field and Lab Work



ScienceDesk Group Thrust Areas

